BC Hydro and Power Authority

2018/19 – 2020/21 SERVICE PLAN

February 2018

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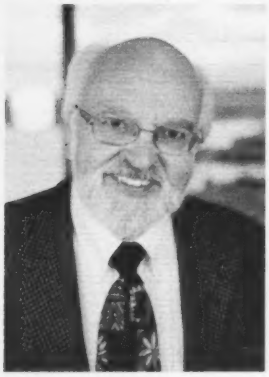
Board Chair Accountability Statement



The 2018/19 - 2020/21 BC Hydro Service Plan was prepared under the Board's direction in accordance with the *Budget Transparency and Accountability Act*. The plan is consistent with government's strategic priorities and fiscal plan. The Board is accountable for the contents of the plan, including what has been included in the plan and how it has been reported. The Board is responsible for the validity and reliability of the information included in the plan.

All significant assumptions, policy decisions, events and identified risks, as of January 31, 2018 have been considered in preparing the plan. The performance measures presented are consistent with the *Budget Transparency and Accountability Act*, BC Hydro's mandate and goals, and focus on aspects critical to the organization's performance. The targets in this plan have been determined based on an assessment of BC Hydro's operating environment, forecast conditions, risk assessment and past performance.

Kenneth G. Peterson
Executive Board Chair

Table of Contents

Board Chair Accountability Statement 3
Strategic Direction and Alignment with Government Priorities 5
Operating Environment 6
Performance Plan 8
Financial Plan 17
Summary Financial Outlook 17
Key Forecast Assumptions, Risks and Sensitivities 18
Sensitivity Analysis 19
Management's Perspective on the Financial Outlook 19
Capital Plan and Major Projects 20
Projects over $50 million 22
Appendix A: Hyperlinks to Additional Information 27
Corporate Governance 27
Organizational Overview 27
Appendix B: Subsidiaries and Operating Segments 28

Strategic Direction and Alignment with Government Priorities

BC Hydro is one of the largest electric utilities in Canada and is publicly owned by the people of British Columbia. We generate and provide electricity to 95 per cent of B.C.'s population and serve over four million people. The electricity we generate and deliver to customers throughout the province powers our economy and quality of life.

Our mission is to provide reliable, affordable, clean electricity throughout B.C., safely. We have set out a three-year plan with strategies, performance measures and targets, aligned with the objectives in the B.C. Government's Mandate Letter, to fulfill our mission on behalf of our customers and the Province.

BC Hydro's electricity system was largely built in the 1960s, 1970s and 1980s and B.C.'s population and economy continue to grow. We are expecting long-term load growth across all customer classes. BC Hydro is investing over $2 billion annually to upgrade and maintain aging assets and build new infrastructure so that our customers continue to receive reliable and clean electricity. To ensure economic and social benefits for ratepayers, we manage our capital portfolio with an emphasis on cost consciousness, respect for the environment and communities in which we work, and strengthening our relationships with First Nations communities.

We have the important responsibility to make electricity rates affordable for our customers, while funding these necessary investments in our electricity system. To support this goal, BC Hydro has applied for a rate freeze in Fiscal 2019 and will participate in a comprehensive review of the corporation to identify ways to make electricity affordable for British Columbians. We will work with the Province (our shareholder) to develop a refreshed plan to keep electricity rates low and predictable over the long-term for our customers.

BC Hydro will continue making significant investments to expand the system and maintain aging infrastructure to meet our customers' growing needs, while managing our costs and improving our service.

BC Hydro is aligned with the Government's key priorities:

Government Priorities	BC Hydro Aligns with These Priorities By:
Making life more affordable	• Ensuring our customers will benefit from affordable, predictable rates while managing our costs, exploring innovative solutions to support our customers and making investments to maintain and expand our electricity system. (Objective 2.1)
Delivering the services people count on	• Reliably meeting the electricity requirements of customers, responding to their evolving expectations by planning and investing in the system to meet future needs, and consistently improving our service. (Objective 1.1)
A strong, sustainable economy	• Implementing our 10 Year Capital Plan so that our customers can continue to receive clean, reliable and affordable electricity. (Strategy under Objective 2.1) • Supporting the creation of a roadmap for the future of B.C .energy that will drive innovation and the electrification of B.C.'s economy, expand energy efficiency and conservation programs, generate new energy responsibly and sustainably and create lasting good jobs across the province. (Strategy under Objective 3.1)

Operating Environment

We have identified four key goals that reflect successfully delivering on our mission: customers will experience reliable and responsive service; we will help make electricity more affordable for our customers; we will continue B.C.'s leading commitment to renewable, clean power; and, our workforce and the public will be safe.

BC Hydro is regulated by the British Columbia Utilities Commission (BCUC). As the independent regulator of BC Hydro, the BCUC is responsible for ensuring that our customers receive safe, reliable and non-discriminatory energy services at fair rates. Current and upcoming proceedings include the Revenue Requirements Application and the Rate Design Application. In preparation for the Rate Design Application, BC Hydro is developing and evaluating a number of rate design options that will help make our customers' electricity bills more affordable and provide customers with more choice. We will also advance other affordability initiatives to help our customers save money on their electricity bills.

To help make electricity more affordable for our customers, BC Hydro has applied for a rate freeze for Fiscal 2019, to take effect April 1, 2018. BC Hydro will also participate in a comprehensive review of the corporation to identify efficiencies, potential savings and revenue generation opportunities. We will work with the Province, as our shareholder, to develop a refreshed plan to keep electricity rates low and predictable over the long-term for our customers, while we continue to make significant investments to expand the system and maintain aging infrastructure.

We will continue to advance critical projects to meet our long-term energy needs, including completing the Site C project by November 2024 at a cost of $10.7 billion or less. Over the past five years, we have completed 540 capital projects at a total cost of $6.4 billion, which is 0.94 per cent under budget overall. We work across teams, suppliers and experts to ensure thoughtful assessment of how to successfully deliver these projects on time and on budget while respecting the unique community, environmental and Indigenous interests associated with each project.

The electricity we generate and deliver throughout B.C. meets a high standard of reliability, but we are always looking for ways to improve our service to our customers, support climate action and help power British Columbia's sustainable, innovative economy. We continue to focus on our renewed customer service strategy, with the goal of making it easier to do business with us and helping our customers make smart energy choices through our conservation and energy management programs, including encouraging our customers to use our clean and reliable electricity to power their homes and businesses.

Working closely with First Nations communities to build stronger, more open and collaborative relationships is a priority for us. We seek to develop and sustain positive long-term relationships and better understand Indigenous interests so that their priorities are recognized in our capital programs and business operations. This approach aligns with BC Hydro's Statement of Indigenous Principles, our legal obligation to consult with First Nations, and First Nations' expectations with respect to how we address their priorities. We will work to further incorporate the calls to action in the Truth and Reconciliation Report and the United Nations Declaration on the Rights of Indigenous People into our business and operations.

It is only possible to achieve the results we have set out in our Service Plan if our employees and workforce can execute their work safely. As a utility that operates in a high hazard industry, safety is top of mind and we are continuously working to improve our performance by understanding hazards and ensuring appropriate design of assets and related work procedures, while building our safety culture and competencies.

With thoughtful planning and prudent decision-making, BC Hydro is well positioned to safely deliver affordable, reliable, clean electricity throughout B.C., today and into the future.

Performance Plan

Four strategic goals guide our actions, each supported by corresponding strategies, performance measures and targets. Each performance measure has a definition and rationale, as well as relevant benchmarking measures that allow a comparison of performance over time. These measures track our progress on delivering our core mission to our customers and the Province. BC Hydro's management is responsible for measuring performance against targets, and results are reported to the Board on a quarterly basis and publicly in the Annual Report.

Goal 1: Set the Standard for Reliable and Responsive Service

Objective 1.1: BC Hydro will reliably meet the electricity requirements of customers and respond to their evolving expectations by planning and investing in the system to meet future needs and by consistently improving our service.

Key Strategies:

- Ensure the reliability of the generation, transmission and distribution system by effectively implementing capital and maintenance programs to manage overall asset health and secure supply to meet customer load throughout the year.
- Safeguard our operating system by enhancing our security systems and well-practiced emergency response plans to improve overall system reliability.
- Through external benchmarking of North American transmission interconnection practices, review and implement appropriate recommendations to meet customer requirements as identified in the Industrial Electricity Policy Review. Initiate the review and revision of generator and load interconnection tariffs by conducting analysis, jurisdictional review and stakeholder engagement.
- Continue to make it easier for customers to do business with us through a series of customer facing improvements such as increased mobile access, enabling more self-service features, exploring new, innovative rate options, expanding in-person service areas and enhancing customer service training for employees.
- Support customers with initiatives that help them to make smart energy management choices through conservation and energy efficiency, capacity reduction and low carbon electrification.
- Sustain the highest, gold-level, certification under the Progressive Aboriginal Relations program by maintaining leading practices focused on Indigenous employment, business development, community relationships and leadership actions.
- Through early engagement and emphasizing collaboration, respect and mutually beneficial relationships with First Nations, BC Hydro will better incorporate Indigenous perspectives and interests in the delivery of our capital projects and define a future together where our business needs and Indigenous interests are aligned.

Performance Measures[1]	2016/17 Actual	2017/18 Forecast	2018/19 Target	2019/20 Target	2020/21 Target
1a. SAIDI (System Average Interruption Duration Index)[2] [Total outage duration (in hours) of sustained interruptions experienced by an average customer in a year]	3.28	3.20	3.30	3.25	3.25
1b. SAIFI (System Average Interruption Frequency Index) [2] [Total number of sustained interruptions experienced by an average customer in a year (excluding major events)]	1.59	1.45	1.40	1.40	1.40
1c. Key Generating Facility Forced Outage Factor (%)	1.78	2.0	1.80	1.80	1.80
1d. CSAT Index [3] [Customer Satisfaction Index: % of customers satisfied or very satisfied]	87.0	85.0	85.0	85.0	85.0
1e. Progressive Aboriginal Relations Designation[4]	Gold	Gold	Gold	Gold	Gold

[1] Performance Measure descriptions, rationale, data source information and benchmarking is available online at www.bchydro.com/performance.

[2] Reliability targets are based on specific values, however performance within 10 per cent is considered acceptable given the reliability projection modelling uncertainty, the wide range of variations in weather patterns and the uncontrollable elements that can significantly disrupt the electrical system. BC Hydro measures reliability under normal circumstances, because major events are not predictable and largely uncontrollable. The reliability measure is therefore based on data that excludes major events. BC Hydro reviews performance during major events and takes the performance into consideration in reliability improvement initiatives.

[3] Customer Satisfaction Index (CSAT) is an index measuring customer satisfaction of BC Hydro's three main customer groups (residential, commercial and key accounts). The index is comprised of the five key drivers of satisfaction weighted equally across the three customer types.

[4] The Canadian Council of Aboriginal Business' Progressive Aboriginal Relations (PAR) Program is a certification program designed to help Canadian businesses benchmark, improve and signal their commitment to progressive relationships with Indigenous communities, businesses and people. It requires companies to set goals and assess themselves in four areas: leadership actions; employment; business development; and community relations. Each company must be certified every three years through a comprehensive review process that involves independent verification.

Linking Performance Measures to Objective:

1a & 1b. Reliability is measured using the System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI). These, along with correlated cause analysis for customer outages, support the targeted investment, planning and process improvement to meet our customers' needs for reliability. By measuring the average number service interruptions and number of hours of sustained interruptions experienced by the average customer in a year, we are able to track our ability to reliably meet the electricity requirements of customers.

1c. A forced outage occurs when a generating unit is unable to start generating or does not stay on line as long as needed. The Key Generating Facility Forced Outage Factor will show the trend of how the assets are performing and aligns with how asset management investment decisions are made to maintain asset reliability that is reflected in a low Forced Outage Factor.

1d. The Customer Satisfaction (CSAT) Index measures customer satisfaction of BC Hydro on five key drivers: value for money, commitment to customer service; providing reliable electricity, acting in the best interest of British Columbians; and efforts to communicate to customers and communities. This measure gauges the level of customer support in meeting their electricity and service needs.

1e. The Canadian Council of Aboriginal Business's Progressive Aboriginal Relations (PAR) Gold certification offers BC Hydro the opportunity to demonstrate, with a high level of assurance, sustained actions towards enhanced Indigenous relations. Given BC Hydro's extensive footprint throughout the province, and its role as a Crown corporation, the comprehensiveness of the PAR certification helps BC Hydro to ensure it is establishing relationships with First Nations built on mutual respect and that appropriately reflect the interests of First Nations communities.

Discussion:

System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) targets are based on a number of factors including long-term historic reliability trending, current year performance, previous years' investments and future years' investment plans. SAIDI's Fiscal 2019/20 target has been adjusted to align with historical performance, trends resulting from investment, planning and process improvements.

There are seven Key Generating Facilities, representing those plants with installed capacity greater than 200 MW. Together they provide 90 per cent of the average annual electricity generated by BC Hydro's facilities. Key Generating Forced Outage Factor is reported as a five year rolling average and defined as the total forced outage time in a period relative to the total number of hours in the same period (usually one year). Annually, the Forced Outage Factor can be relatively volatile and through applying the historical five year rolling average it can smooth the range to provide a more stable measure for which targets can be set. Therefore, the strategy is to keep the Forced Outage Factor below 1.8 per cent of the total number of hours per year.

Progressive Aboriginal Relations Designation – BC Hydro attained the highest, gold-level, designation from the Canadian Council for Aboriginal Business in 2015/16, which is valid for a three year period. In 2018/19, BC Hydro will apply for the next certification and seek to sustain our gold-level certification.

Goal 2: Help make electricity more affordable for our customers

Objective 2.1: BC Hydro customers will benefit from affordable, predictable rates while we manage our costs, explore innovative solutions to support our customers and make investments to maintain and expand our electricity system.

Key Strategies:

- Advance affordability initiatives and rate structures with the BC Utilities Commission to help our customers manage their electricity bills.
- Apply for a rate freeze for 2018/19 and work with the Province to develop and implement a refreshed plan to keep electricity rates affordable and predictable.
- Participate fully in the comprehensive review of the corporation to identify ways to make electricity more affordable for British Columbians.
- Complete the Site C Project by November 2024, at a total cost of no more than $10.7 billion. We will also:
    - provide quarterly updates to Treasury Board; and,
    - enhance project oversight by adding an independent expert Project Assurance Team to advise the Site C Project Board.
- Continue to implement the 10 Year Capital Plan so that our customers can continue to receive clean, reliable and affordable electricity.
- Continue to refine and enhance our systematic and disciplined project delivery methodology to ensure that our projects are put into service safely, on time and on budget and to a high standard of quality.
- Improve how we operate by focusing on safety, operational excellence, efficiency and reliability by enhancing work delivery methods, as well as resourcing and supply chain strategies.

Performance Measures[1]	2016/17 Actual	2017/18 Forecast	2018/19 Target	2019/20 Target	2020/21 Target
2a. Competitive Rates[2]	1st quartile	1st quartile	1st quartile	1st quartile	1st quartile
2b. Project Budget to Actual Cost[3]	-0.94% on $6.36 billion[4]	Within +5% to -5% of budget excluding project reserve amounts	Within +5% to -5% of budget excluding project reserve amounts	Within +5% to -5% of budget excluding project reserve amounts	Within +5% to -5% of budget excluding project reserve amounts

[1] Performance Measure descriptions, rationale, data source information and benchmarking is available online at www.bchydro.com/performance.
[2] BC Hydro calculates a relative index for each usage level within the residential category and then calculates an average of the index to create an overall ranking. The rankings of the 22 participating utilities are then divided into quartiles to determine our ranking.
[3] This measure compares actual project costs at completion to the original approved full scope implementation budgets, not including project reserve amounts, for capital projects that were put into service during the five-year rolling period.
[4] This is a five-year rolling data set reflecting 2012/13 to 2016/17.

Linking Performance Measures to Objectives:

2a. Competitive Rates is based on BC Hydro's ranking in the residential category in the annual Hydro Quebec Report on Electricity Rates for major utilities in North America. The report is used as a benchmark to demonstrate that our rates are affordable and predictable compared to other major North American utilities.

2b. BC Hydro measures its performance in delivering capital projects with the Project Budget to Actual Cost measure. We prudently manage all costs, including capital expenditures, to maintain affordable rates for our customers.

Discussion:

BC Hydro's residential rates have consistently been ranked in the first quartile (sixth this year), based on analysis of the 2017 Hydro Quebec's Comparison of Electricity Prices in Major North American Cities report.

BC Hydro is spending an average of more than $2 billion per year over the next 10 years on capital projects. The Project Budget to Actual Cost measure includes Generation, Substation and Transmission Line projects managed by Project Delivery. Annually, BC Hydro reflects the past five years' performance at the portfolio level in delivering capital projects.

Goal 3: Continue British Columbia's Leading Commitment to Renewable Clean Power

Objective 3.1: BC Hydro will strengthen its legacy of renewable, clean power and conservation investments by expanding its energy-efficiency and conservation programs to include low-carbon electrification and by identifying and securing new, sustainable, responsibly generated, competitively priced energy and capacity options to meet future customer needs.

Key Strategies:

- Support the creation of a roadmap for the future of B.C. energy that will drive innovation and the electrification of B.C.'s economy, expand energy efficiency and conservation programs, generate new energy responsibly and sustainably, and create lasting good jobs across the province.
- Support customers with initiatives that help them to make smart energy management choices with conservation, efficiency, capacity reduction and low carbon electrification.
- Implement our energy conservation and energy management plan, which will exceed the *Clean Energy Act* requirement to meet at least two-thirds of future demand growth by 2020.
- Provide customers with the opportunity to access clean, renewable power to displace the use of higher carbon energy sources.
- Continue to provide opportunities for First Nations located in remote communities that are not integrated with the BC Hydro system through established renewable energy programs.
- Work with the Ministries of Energy, Mines and Petroleum Resources and Finance and Indigenous groups, to make recommendations for a new Indigenous-focused clean energy and/or clean capacity power call to Government by fall 2018.

Performance Measures[1]		2016/17 Actual	2017/18 Forecast	2018/19 Target	2019/20 Target	2020/21 Target
3a.	Energy Conservation Portfolio (New incremental GWh/year)[2]	733	600	800	700	700
3b.	Clean Energy (%)	98.4	98.1	93.0	93.0	93.0
3c.	New Clean Supply (%)	100	100	100	100	100

[1] Performance Measure descriptions, rationale, data source information and benchmarking is available online at www.bchydro.com/performance

[2] Annual targets are part of a longer-term Demand Side Management Plan that is set to fulfill the *Clean Energy Act* requirement to meet at least two-thirds of future demand growth by 2020 and BC Hydro's long term planning needs.

Linking Performance Measures to Objectives:

3a. The Energy Conservation Portfolio metric reflects new incremental energy savings from programs, codes and standards and conservation rates that measure BC Hydro's performance against annual energy targets. This measures the success of BC Hydro's planned conservation targets.

3b. The Clean Energy performance measure demonstrates BC Hydro's efforts to supply clean, sustainable, responsibly generated, affordable electricity in order to reduce GHG emissions in the province and continue to meet the 93 per cent minimum clean energy objective in the *Clean Energy Act*. The higher the per cent clean energy that BC Hydro achieves, the lower the GHG emissions in the province.

3c. New Clean Supply is a reflection of performance within the operating period in acquiring 100 per cent of supply for the integrated grid from clean or renewable sources.

Discussion:

The targets for Energy Conservation Portfolio are based on BC Hydro's forecast of annual new incremental energy savings and do not reflect past performance and/or adjustments made to energy savings in prior years (e.g., persistence, evaluations, measurement and verification). In some cases, the timing of savings for anticipated codes and standards and timing of large customer projects can shift, which will cause actual incremental energy savings to vary from the targets that have been set for the period. Updated customer information on the timing of thermo-mechanical pulp projects and the timing of energy savings from recent lighting regulations are incorporated into the plan, which has resulted in increased targets for 2018/19 and 2019/20 of 800 GWh/year (gigawatt-hours per year) and700 GWh/year respectively, followed by700 GWh/year in 2020/21.

The Clean Energy performance measure represents the minimum threshold generation output in accordance with the B.C. Government's requirement that at least 93 per cent of electricity generation in the province be from clean or renewable resources, as specified in the *Clean Energy Act*. While actual output of the non-clean resources in the system supports system reliability and can vary depending on market conditions and water inflows to our reservoirs, BC Hydro expects that the actual performance will remain close to 98 per cent.

New Clean Supply was a new measure introduced for 2017/18. It reflects the percentage of projects that are designated as clean or renewable in considering new supply agreements for all greenfield[1] generation projects entered into during the year. The target is that 100 per cent of new supply projects for the integrated grid for the year come from clean or renewable sources.

[1] BC Hydro defines a Project to be "greenfield" when the generation system is a new facility, and not the renovation, refurbishment, re-commissioning and/or use of an existing facility

Goal 4: Safety Above All

Objective 4.1: Safety at BC Hydro is a core value. We are committed to ensuring our workforce goes home safely every day, and that the public is safe around our system.

Key Strategies:

- Work to achieve zero fatalities and zero disabling injuries. Examples of projects include: the Opportunity to Reduce Electrical Hazards project, which will account for full extension of reach in minimum approach distances to electrical equipment; the continued work around implementing arc flash work methods; training and personal protective equipment to reduce burns and injuries; and Confined Space training and competency assessments.
- Reduce lost time injuries and medical aid injuries. Examples of projects include: the field/plant ergonomics program and our return to work program.
- Build a culture to achieve excellence in safety. Examples of investments include: regular reviews of safety incidents by the senior management team; timely implementation of corrective actions that reduce risk of injuries; and completion of Safe Work Observations that identify hazards before injuries occur.
- Meet regulatory requirements. Examples of projects include: a project to evaluate compliance in our fall protection program; our evaluation and implementation of a new tracking program to identify and ensure compliance with new regulatory requirements when they are enacted; and providing training and equipment to ensure safe work in confined spaces.
- Build corporate systems and tools supporting excellence in safety. Examples of projects include: Field Access to Safety Information, which continues to improve the quality of safety information; and evaluation of a new electronic tailboards and safe work observation tool.
- Monitor our safety performance and identify safety risks to our workers and the public.

Performance Measures[1]		2016/17 Actual	2017/18 Forecast	2018/19 Target	2019/20 Target	2020/21 Target
4a.	Zero Fatality & Serious Injury[2] [Loss of life or the injury has resulted in a permanent disability]	0	0	0	0	0
4b.	Lost Time Injury Frequency [Number of employee injury incidents resulting in lost time (beyond the day of the injury) per 200,000 hours worked]	1.04	0.89	0.85	0.80	0.75
4c.	Timely Completion of Corrective Actions (%)	96	92	93	95	95

[1] Performance Measure descriptions, rationale, data source information and benchmarking is available online at www.bchydro.com/performance

[2] Zero Fatality and Serious Injury – BC Hydro's safety performance measures do not include contractor or public safety injuries or fatalities.

Linking Performance Measures to Objectives:

4a. Achieving our target of Zero Fatality and Serious Injury supports our objective that everyone goes home safely, every day.

4b. When a worker is injured, focusing on Lost Time Injury Frequency ensures that we help minimize the impact of the injury to the worker. The earlier an injured worker is able to safely return to productive employment and maintain a positive connection to the workplace, the more likely the worker will obtain a quick recovery.

4c. Timely Completion of Corrective Actions demonstrates that we are a learning organization and we are committed to address identified deficiencies that have a direct impact on the safety of our workforce. By implementing corrective actions in a timely manner, we will see an improvement in our safety performance over time as systemic deficiencies are corrected and workers experience a lower frequency of recurring issues.

Discussion:

The definition used for Timely Completion of Corrective Actions has changed from the previous Service Plans. Previously, this performance measure was defined as the percentage of safety corrective actions closed within 30 days of the original scheduled due date on an annual basis, with an aim to improve over time. The new definition removes the 30 day buffer and the performance measure is now defined as the percentage of safety corrective actions closed on or before the scheduled due date on an annual basis, with an aim to improve over time. The 2018/19 and 2019/20 targets have been adjusted accordingly.

Lost Time Injury Frequency targets trend downward to reflect the success of our Return To Work/Stay at Work program.

Financial Plan

Summary Financial Outlook

Consolidated Statement of Operations[1, 2] ($ millions)	2017/18 Forecast	2018/19 Budget	2019/20 Budget	2020/21 Budget
Total Revenue				
Domestic	5,474	5,689	5,803	5,942
Trade	630	635	634	648
Total Revenues	**6,104**	**6,323**	**6,436**	**6,589**
Total Expenses				
Operating Costs				
Cost of Energy	2,188	2,276	2,333	2,374
Personnel expenses, materials & external services[3]	1,017	1,053	1,051	1,086
Amortization	1,230	1,266	1,263	1,348
Finance charges	661	705	713	717
Grants and taxes	239	245	254	261
Other Operating Costs	71	66	109	90
Total Expenses	**5,406**	**5,611**	**5,724**	**5,877**
Net Income	**698**	**712**	**712**	**712**
Dividends	**159**	**59**	-	-
Net Debt[4]	**20,288**	**22,511**	**23,718**	**24,911**
Equity	**5,448**	**6,101**	**6,813**	**7,525**
Capital Expenditures[2]	**2,386**	**3,744**	**2,875**	**3,123**

[1] Table may not add due to rounding.

[2] Includes the purchase of the remaining two-thirds interest in the Waneta Dam and Generating Station. The transaction was approved by the Board but still requires BC Utilities Commission approval. BC Hydro anticipates obtaining this approval by the required transaction closing date of August 1, 2018.

[3] These amounts are net of capitalized overhead and consist of the following:

	2017/18	2018/19	2019/20	2020/21
Domestic Base Operating Costs	747	759	765	772
Other	270	294	287	314
	1,017	1,053	1,051	1,086

Other largely consists of Powerex & Powertech operating costs, operating costs related to energy purchase agreements accounted for as capital leases, and the transitioning of IFRS-ineligible capital overhead into operating costs over a 10-year period.

[4] Debt figures are net of sinking funds and cash and cash equivalents.

Key Forecast Assumptions, Risks and Sensitivities

Key Assumptions	2017/18 Forecast	2018/19 Budget	2019/20 Budget	2020/21 Budget
Growth and Load				
B.C. Real Gross Domestic Product Growth (%)[1]	2.2	2.3	2.3	2.3
Domestic Sales Load Growth (%)[2, 3]	0.28	1.20	0.70	1.96
Residential Sales Load Growth (%)[2]	0.85	0.16	0.45	0.39
Light Industrial and Commercial Sales Load Growth (%)[2]	(0.41)	0.05	0.81	0.58
Large Industrial Sales Load Growth (%)[2]	(0.12)	4.42	0.28	6.69
Domestic Load (GWh):				
Domestic Sales Volume (GWh)[3]	52,038	52,664	53,033	54,072
Surplus Sales Volume (GWh)	5,682	3,076	3,169	2,938
Line Loss and System Use (GWh)	5,086	5,426	5,468	5,333
Total Domestic Load (GWh)	62,806	61,167	61,670	62,343
Energy Generation				
Total System Water Inflows (% of average)	97	100	100	100
Sources of Supply to Meet Domestic Load:				
Net Hydro Generation (GWh)	47,522	45,289	45,052	45,689
Market Electricity Purchases (GWh)[4]	244	487	853	861
Independent Power Producers and Long-term Purchases (GWh)	14,920	15,067	15,408	15,435
Thermal Generation & Other (GWh)	120	324	357	357
Sources of Supply for Domestic Load (GWh)	62,806	61,167	61,670	62,343
Average Mid-C Price (U.S.$/MWh)	22.25	21.43	22.18	23.78
Average Natural Gas Price at Sumas (U.S.$/MMBTU)	2.61	2.32	2.19	2.20
Financial				
Canadian Short-Term Interest Rates (%)[5]	1.05	1.72	2.04	2.48
Canadian Long-Term Interest Rates (%)[5]	2.78	3.36	3.76	4.20
Foreign Exchange Rate (U.S.$:Cdn$)[5]	0.7900	0.8088	0.8026	0.8033

[1] Economic assumption based on calendar year, from Ministry of Finance September 2016 First Quarter Report.
[2] Includes the impact of Demand-Side Management programs.
[3] Excludes surplus sales.
[4] Assumes that gas fired power generation capability available to service domestic demand is sometimes displaced by more cost-effective market purchases.
[5] Financial assumptions from Ministry of Finance, October 2017.

Sensitivity Analysis

Factor	Change	Approximate change in 2018/19 earnings before regulatory account transfers (in $ millions)
Hydro Generation (GWh)[1]	+/- 1%	10
Electricity trade margins	+/- 10%	20
Interest rates	+/- 100 basis points	35
Exchange rates (US/ CDN)	$0.01	5
Customer Load	+/-1%	30

Management's Perspective on the Financial Outlook

In November 2013, the Province, as part of the 10 Year Rates Plan, announced rate increases for BC Hydro in 2014/15 and 2015/16 of 9 per cent and 6 per cent, respectively, with rate increases for 2016/17 to 2018/19 capped at 4 per cent, 3.5 per cent and 3 per cent. To achieve the 10 Year Rates Plan goals several actions have been taken to reduce pressure on rates including prioritizing and reducing capital spending, limiting operating costs, implementing a debt management strategy, updating our Demand-Side Management Plan, eliminating tier three water rental rates, lowering the return on equity, reducing dividends and smoothing general rate increases through the use of a regulatory account.

In the Government Mandate letter to BC Hydro dated August 24, 2017, Government asked BC Hydro to work with the Ministry to freeze BC Hydro rates and develop a refreshed plan to keep electricity rates low and predictable over the long-term. These financial projections assume a 0 per cent rate increase in 2018/19.

At the time of preparing this forecast, Government had not yet indicated its expectations for future rates after 2018/19. Rate increases for these years will be subject to change pending the comprehensive review of BC Hydro that Government has announced will be undertaken and completion of the refreshed plan for rates that will be developed.

BC Hydro prepared the current financial projections for revenues and expenses through 2020/21 which were approved by the Board and submitted to the Ministry of Finance in January 2018.

[1] Assumes a change in hydro generation is offset by corresponding change in energy imports (i.e. increase in hydro generation is offset by decrease in energy imports).

Capital Plan and Major Projects

Capital Expenditure by Year and Type and Function

($millions)	2016/17 Actual	2017/18 Forecast	2018/19 Forecast	2019/20 Forecast	2020/21 Forecast
Capital Expenditures by Type[1]					
Sustaining	1,158	1,193	1,079	1,145	1,212
Growth	1,286	1,193	2,665	1,730	1,911
Subtotal – BC Hydro Capital Expenditures before CIA	2,444	2,386	3,744	2,875	3,123
Contributions-in-Aid (CIA)[2]	(138)	(141)	(139)	(145)	(151)
Total – BC Hydro Capital Expenditures net of CIA	2,306	2,245	3,605	2,730	2,972
Generation	585	548	427	450	481
Waneta	-	-	1,259	30	70
Transmission and Distribution	966	931	955	1,124	1,138
Properties, Technology and Other	230	225	204	186	152
Site C Project[3]	663	682	899	1,085	1,282
Subtotal – BC Hydro Capital Expenditures before CIA	2,444	2,386	3,744	2,875	3,123
CIA	(138)	(141)	(139)	(145)	(151)
Total BC Hydro Capital Expenditures net of CIA	2,306	2,245	3,605	2,730	2,972

[1] BC Hydro classifies capital expenditures as either sustaining capital or growth capital:

- Sustaining capital includes expenditures to ensure the continued availability and reliability of generation, transmission and distribution facilities. It also includes expenditures to support the business, such as vehicles and information technology.
- Growth capital is required to meet customer load growth and other business investments. Growth capital expenditures relate to the expansion of existing generation assets as well as expansion and reinforcement of the transmission and distribution system, and includes the Site C project.

[2] Contributions in aid of construction are amounts paid by certain customers toward the cost of property, plant and equipment required for the extension of services to supply electricity.

[3] These estimates are based on the expenditure forecast for the Site C project prepared (as of early December 2017) and will be reviewed and updated on an ongoing basis as the project moves forward.

Projects over $50 million

BC Hydro has the following projects, each with capital costs expected to exceed $50 million, listed according to targeted completion date. These projects have been approved by the Board of Directors.

Major Capital Projects (over $50 million)	Targeted Completion Date (Year)	Project Cost to Dec 31, 2017 ($ millions)	Estimated Cost to Complete ($ millions)	Approved Anticipated Total Capital Cost of Project ($ millions)
Projects Recently Put Into Service				
Big Bend Substation The South Burnaby, Big Bend area required a new, 100 MVA, 69/12 kV substation to meet local residential and commercial load growth.	2017 In-Service	$68	$4	$72
Ongoing				
Ruskin Dam Safety and Powerhouse Upgrade Improve seismically deficient dam and rehabilitation/replacement of powerhouse equipment that was brought into service between 1930 and 1950. The project includes: upgrading of the right abutment; redeveloping the dam and powerhouse to meet current seismic standards for earthquakes; and replacing major generation equipment which is in poor or unsatisfactory condition.	2018 Targeted In-Service	$591	$157	$748
Horne Payne Substation Project Expand the Horne Payne Substation with the addition of two 230/25kV, 150MVA transformers, gas-insulated feeder sections, and a new control building. This project will increase the firm capacity of the substation, add needed feeder positions, facilitate the gradual conversion of the area supply voltage from 12kV to 25kV, and allow for the implementation of an open-loop distribution system.	2018 Targeted In-Service	$48	$45	$93
Kamloops Substation The project is to construct a new 100MW 138/25kV substation in the west side of Kamloops to meet expected load growth in the Kamloops service area.	2018 Targeted In-Service	$37	$19	$56

Major Capital Projects (over $50 million)	Targeted Completion Date (Year)	Project Cost to Dec 31, 2017 ($ millions)	Estimated Cost to Complete ($ millions)	Approved Anticipated Total Capital Cost of Project ($ millions)
John Hart Generating Station Replacement Replace the existing six-unit 126 MW generating station (in operation since 1947) and add integrated emergency bypass capability to ensure reliable long-term generation and to mitigate earthquake risk and environmental risk to fish and fish habitat.	2019 Targeted In-Service	$843	$250	$1,093
Cheakamus Unit 1 and Unit 2 Generator Replacement Replace the two generators at Cheakamus generating station (in operation since 1957) to address their poor condition and known deficiencies, and increase the capacity of each unit from 70 MW to 90 MW.	2019 Targeted In-Service	$26	$48	$74
Fort St. John and Taylor Electric Supply This project will maintain adequate supply capability, reduce line losses and improve reliability to the loads in the Fort St. John and Taylor areas by re-terminating 138kV transmission lines at the new Site C switchyard, and the addition of a 75 MVA transformer and new feeder positions.	2020 Targeted In-Service	$3	$50	$53
W.A.C Bennett Dam Riprap Upgrade Project This project will address inadequate erosion protection on the upstream face of the W.A.C Bennett Dam. The primary driver of the project is safety of the dam itself as well as safety of the public, property, and environment downstream.	2019 Targeted In-Service	$95	$75	$170

Major Capital Projects (over $50 million)	Targeted Completion Date (Year)	Project Cost to Dec 31, 2017 ($ millions)	Estimated Cost to Complete ($ millions)	Approved Anticipated Total Capital Cost of Project ($ millions)
South Fraser Transmission Relocation Project* In September 2013, the Province of B.C. announced that the George Massey Tunnel will be replaced with a new bridge. The construction of the new bridge, modifications to Highway 99 and the decommissioning of the George Massey tunnel will require BC Hydro to relocate certain sections of two 230kV transmission circuits (Circuit 2L62 and Circuit 2L58) from their present location adjacent to Highway 99 and in the George Massey tunnel. These two 230kV circuits form a critical part of BC Hydro's transmission network supplying power to customers in Richmond, Delta and the Greater Vancouver area. **The project and estimated budget are currently under review. As of September 6, 2017, construction work on the South Fraser Transmission Relocation project has been suspended, pending a government review of the George Massey Tunnel Replacement project.*	TBD	$28	$48	$76
Bridge River 2 Units 5 and 6 Upgrade Project The Bridge River 2 powerhouse Generator Units 5 and 6, which were placed in service in 1960, are in unsatisfactory condition and unreliable. This project will replace the two generators and other related equipment to restore the historical operating capacity.	2019 Targeted In-Service	$12	$74	$86

Major Capital Projects (over $50 million)	Targeted Completion Date (Year)	Project Cost to Dec 31, 2017 ($ millions)	Estimated Cost to Complete ($ millions)	Approved Anticipated Total Capital Cost of Project ($ millions)
G.M. Shrum G1-G10 Control System Upgrade – Phases I - III The condition of the legacy controls for the GMS generating units, which were originally installed in the 1960s and 1970s, is of growing concern due to increasing maintenance requirements, lack of spare parts availability and decreasing reliability. The controls are well beyond their expected life, which causes operating problems and increases the risk of damage to major equipment. The project will replace the controls equipment, provide full remote control capability from the remote control center and rectify deficiencies in the current system.	2022 Targeted In-Service	$20	$55	$75
UBC Load Increase Stage 2 Project BC Hydro is undertaking the UBC Load Increase Stage 2 project on behalf of its customer, the University of British Columbia, to continue to reliably meet the growing electricity needs of its Point Grey campus and the surrounding community.	2021 Targeted In-Service	$4	$51	$55
Mica Replace Units 1-4 Transformers Project The Unit 1-4 Generator Step-up Unit transformers at the Mica Generating Station are nearing end of life. There is a heightened reliability and safety risk from continuing to operate these transformers in an underground powerhouse as they age. The project was initiated to address reliability and safety risks associated with operating the existing transformers.	2022 Targeted In-Service	$1	$81	$82

Major Capital Projects (over $50 million)	Targeted Completion Date (Year)	Project Cost to Dec 31, 2017 ($ millions)	Estimated Cost to Complete ($ millions)	Approved Anticipated Total Capital Cost of Project ($ millions)
Site C Project Site C will be a third dam and hydroelectric generating station on the Peace River approximately seven kilometres southwest of Fort St. John. It will be capable of producing approximately 5,100 gigawatt-hours of electricity annually and 1,100 megawatts of capacity. Site C project was approved by the Provincial Government in December 2014. Site C will provide clean, renewable and cost-effective power in B.C. for more than 100 years. **Planned in-service date for all units.* ***Site C forecast and life-to-date amounts include both capital costs and expenditures subject to regulatory deferral. Total cost was increased to $10,700 million from $8,775 million. The amount includes a reserve of $708 million.*	2024* Targeted In-Service	$2,127	$8,573	$10,700**

Appendix A: Hyperlinks to Additional Information

Corporate Governance

Information about Corporate Governance can be found at:
http://www.bchydro.com/about/accountability_reports/financial_reports/service_plan.html.

This includes links to information regarding:

- Board of Directors
- Executive Team
- Code of Conduct

Organizational Overview

Information about BC Hydro's Operating Environment can be found at:
http://www.bchydro.com/about/accountability_reports/financial_reports/service_plan.html.

This includes links to information about BC Hydro's operations, governance and mandate.

Appendix B: Subsidiaries and Operating Segments

As wholly-owned subsidiaries, Powerex Corp. and Powertech Labs Inc. are subject to the same corporate governance practices as BC Hydro. Both BC Hydro and its wholly-owned subsidiaries follow best practices in corporate governance and subsidiary activities align with BC Hydro's mandate, strategic priorities and fiscal plan.

Powerex Corp.
Powerex Corp. is a wholly-owned subsidiary of BC Hydro and a key participant in energy markets across North America, buying and supplying wholesale power, renewable energy, natural gas, ancillary services, and financial energy products and services. Established in 1988, its export, marketing and trade activities help manage BC Hydro's electric system resources and provide significant economic benefits to B.C.

Powerex supports BC Hydro's electric system requirements through importing and exporting energy as required in addition to meeting its own trade commitments. Powerex also markets, on behalf of the Province, the Canadian Entitlement to the Downstream Benefits of the Columbia River Treaty.

The Chief Executive Officer (CEO) of Powerex reports directly to the Board of Directors of Powerex. The Powerex CEO and the Chair of the Powerex Board ensure that BC Hydro's President, BC Hydro's Executive Team and the Board of BC Hydro are informed of Powerex's key strategies and business activities.

Powerex operates in complex and volatile energy markets, which can cause net income in any given year to vary significantly. Market and economic conditions, reduced BC Hydro system flexibility, income timing differences and the strength of the Canadian dollar can materially impact Powerex net income. The Service Plan forecast includes annual net income from Powerex of approximately $125 million per year for 2018/19 to 2020/21. For more information, visit powerex.com.

Board of Directors:

- Ken Peterson - Chair
- Len Boggio
- James Hatton
- Valerie Lambert
- Chris O'Riley

Powertech Labs Inc.
Powertech Labs, operating in Surrey since its inception in 1979, is a wholly-owned subsidiary of BC Hydro. Powertech is internationally recognized as holding expertise in various fields of operation, and provides research and development, testing, technical services and advanced technology services to the international energy community, including BC Hydro.

The Service Plan forecast includes annual net income from Powertech of approximately $4 million per year for 2018/19 to 2020/21. For more information, visit powertechlabs.com.

Board of Directors:
- Chris O'Riley - Chair
- David Lebeter
- Mark Poweska

Other Subsidiaries
BC Hydro has created or retained a number of other subsidiaries for various purposes, including holding licences in other jurisdictions, to manage real estate holdings and to manage various risks.

All the staff and management needs of the active subsidiaries below are fulfilled by BC Hydro employees, who perform these duties without additional remuneration. Three of these subsidiaries are considered active:

BCHPA Captive Insurance Company Ltd.
Procures insurance products and services on behalf of BC Hydro.

Columbia Hydro Constructors Ltd.
Administers and supplies the labour force to specified projects.

Tongass Power and Light Company
Provides electrical power to Hyder, Alaska from Stewart, B.C. due to its remoteness from the Alaska electrical system.

Nominee Holding Companies and/or Inactive/Dormant Subsidiaries
BC Hydro's remaining subsidiaries either serve as nominee holding companies (indicated with an *) or are considered to be inactive/dormant. The inactive/dormant subsidiaries do not carry on active operations. As of December 31, 2017, these other subsidiaries consisted of the following:

1. British Columbia Hydro International Limited
2. British Columbia Power Exchange Corporation
3. British Columbia Power Export Corporation
4. British Columbia Transmission Corporation
5. Columbia Estate Company Limited*
6. Edmonds Centre Developments Limited*
7. Fauquier Water and Sewerage Corporation
8. Hydro Monitoring (Alberta) Inc.*
9. Victoria Gas Company Limited
10. Waneta Holdings (US) Inc.*
11. 1111472 BC Ltd.